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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,620	09/15/2000	Jay M. Short	DIVER1140-3	2110

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HALE AND DORR LLP
300 PARK AVENUE
NEW YORK, NY 10022

EXAMINER

NASHED, NASHAAT T

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 11/27/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

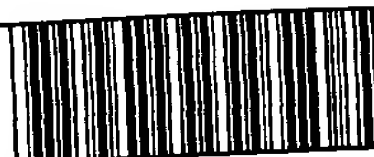
Application No.
09/663,620

Applicant(s)

Short, J. M.

Examiner
Nashaat T. Nashed

Art Unit
1652



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 9, 2002
- 2a) ☒ This action is **FINAL**.
- 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 24-120, and 132-169 is/are pending in the application.
- 4a) Of the above, claim(s) 31, 33-40, 52, 54, 56, 59-62, 88, 90-97, 112-115, and 118 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-30, 32, 41-51, 53, 55, 57, 58, 63-87, 89, 98-111, 116, 117, 119, 120, and 132-169 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

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The application has been amended as requested in the communications filed September 9, 2002. Accordingly, claims 167-169 have been entered, claims 23 and 121-131 have been canceled, and claims 1, 6, 7, 12, 22, 27, 30-41, 48, 52-55, 57-63, 68, 69, 72, 73, 82, 87-98, 105, 107-115, 119, 135, and 137.

Claims 1-22, 24-30, 32, 41-51, 53, 55, 57, 58, 63-87, 89, 98-111, 116, 117, 119, 120, and 132-169 are under consideration in this Office action.

This application contains claims 31, 33-40, 52, 54, 56, 59-62, 88, 90-97, 112-115, and 118 are drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

The disclosure is objected to because of the following informalities:

- (i) Page 90, line 20, "a mini-ultracentrifuged 45k rpm at 20 degree for four hours" is not adequate description of centrifugation experiment. In order for the above description to be adequate, either the rotor of the centrifuge or the Gravitational force (G-force) should be identified. In the absence of the description of the rotor or the G-force, one of ordinary skill in the art would not be able to reproduce the experiment described.
- (2) The primers used in the PCR experiment on page 96, line 14 are not described or identified by a sequence identification numbers.

Appropriate correction is required.

Applicant traverses the above objection and argues that: (1) one of ordinary skill in the art would know what is meant by a "micro-ultracentrifuge"; and (2) there is no need to disclose nay primer.

Applicant's arguments filed 9/9/02 have been fully considered but they are not deemed to be persuasive for the following reasons:

- (1) There are many instruments on the market which are known as many centerfuge. Applicant should identify the centerfuge and the rotor that comes with it or the G-force which is required for the separation in order to reproducible results.
- (2) The experiment on page 96 is directed to the mutagenesis of a specific enzyme named 9N2 β -glycosidase. In order for an ordinary skill in the art to repeat the disclosed experiment one of ordinary skill in the art would want to know either the sequence of said glycosidase or the primer in addition to the source of DNA.

For the above reasons, applicant is required to overcome the above objections to the specification.

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Claim 16 and 76 are objected to under 37 CFR § 1.75(d)(1) as being in improper form because the claim states an improper Markush group. Compounds included within a Markush group must "(1) share a common utility and (2) share a substantial structural feature disclosed as being essential to that utility." (See MPEP § 803.02.) The various members of the Markush group in claim 16 and 76 are different enzymatic activities and therefor do not share a common utility and a structural feature required for the stated utility.

Claim 21, 82, 156, and 165 are objected to under 37 CFR § 1.75(d)(1) as being in improper form because the claim states an improper Markush group. Compounds included within a Markush group must "(1) share a common utility and (2) share a substantial structural feature disclosed as being essential to that utility." (See MPEP § 803.02.) The various members of the Markush group in claim 21, 82, 156, and 165 are various kind of organisms and do not share a common structural feature which is required for the stated utility.

Applicant argues that the claims are proper Markush group and cite MPEP § 2173.05(h).

Applicant's arguments filed 9/9/02 have been fully considered but they are deemed to be partially persuasive with regard to claims 7, 30, 69, 79, 87, 139, 140, 146, and 158. Claim 138 has been amended to place the claim in proper form. The arguments are not deemed to be persuasive with regard to claims 16, 21, 76, 82, 156, and 165. The members of the Markush group of claims 16 and 76 are not related to one another by common structure or function because they are independent classes of enzymatic activities. Similarly, the members of the Markush group of claims 21, 82, 156, and 165 are independent class of organisms having different physical properties and can survive under different sever environmental condition. MPEP § 2173.05(h) states:

While in the past the test for Markush-type claims was applied as liberally as possible, present practice which holds that claims reciting Markush groups are not generic claims (MPEP § 803) may subject the groups to a more stringent test for propriety of the recited members. Where a Markush expression is applied only to a portion of a chemical compound, the propriety of the grouping is determined by a consideration of the compound as a whole, and does not depend on there being a community of properties in the members of the Markush expression. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper. (underlining added for emphases).

Thus, the Markush Group has to be proper according to MPEP § 803.

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A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 63, 109, 110, 116, 119, 120, 132, 136-138 and 141-142 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 41-49, 52, 55, 56, 60, 62, 63, 68, and 69 of copending Application No. 09/375,605. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Applicant requests to hold the provisional rejections of claims 116, 119, 120, 132, 136-138, 141 and 142 in abeyance until all other rejections have been officially obviated in this case or '605 application. He traverses the rejection of claims 63, 109, and 110 on the ground that the claims of the instant application have different scope from that of claim 41 of the 605 application.

Applicant's arguments filed 9/9/02 have been fully considered but they are not deemed to be persuasive. It is true that claim 41 and 63, 109, and 110 are not using the same wording, but the claimed method is identical. While the phrase "creating a library" is not in claims 63, 109, and 110, it hard to envision some one screening a library without mak

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

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ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-30, 32, 41-51, 53, 55, 57, 58, 63-87, 89, 98-111, 116, 117, and 119-169 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 5,939,250 (250) in view of the prior art as exemplified by Stemmer *et al.* (see IDS, reference AE, U. S. Patent 5,605,793) for the reasons set forth in the prior Office action, paper number 9.

Claims 1-12 of the 250 patent are drawn to a process of identifying enzymatic activity comprising screening a library containing a plurality of clones containing DNA isolated from heterologous population of microorganisms for a specific activity; isolating a clone which is positive for desired activity; subjecting said DNA in the clone to mutagenesis, and comparing the catalytic activity of the enzyme encoded by the mutated DNA to that of the wild-type for the reasons set forth in the prior Office action, paper number 9.

Claims 1-30, 32, 41-51, 53, 55, 57, 58, 63-87, 89, 98-111, 116, 117, and 119-169 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 5,958,672 (672') in view of the prior art as exemplified by Arnold *et al.* (see IDS, reference AH, U. S. Patent 5,316,935) and Stemmer *et al.* (see IDS, reference AE, U. S. Patent 5,605,793) for the reasons set forth in the prior Office action, paper number 9.

Claims 1-30, 32, 41-51, 53, 55, 57, 58, 62-87, 89, 98-108, 111, 117, 126, 128, 130, 133-135, 140, and 143-169 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 41-70 of U.S. patent application No. 09/375,605 (605) in view of the prior art as exemplified by Arnold *et al.* (see IDS, reference AH, U. S. Patent 5,316,935) and Stemmer *et al.* (see IDS, reference AE, U. S. Patent 5,605,793) for the reasons set forth in the prior Office action, paper number 9.

Applicant appears to accept the obviousness-double patenting rejections and indicates his willingness to file a terminal disclaimer to overcome the above rejection. Claims 167-169 are included in these rejections because they are claiming the subject

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matter of claim 133. The above rejections will be vacated upon filing a proper terminal disclaimer with the appropriate fees.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-30, 32, 41-51, 53, 55, 57, 58, 63-87, 89, 98-111, 116, 117, and 119-169 are rejected under, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following are the reasons for the rejections:

- (a) The phrases "bioactivity or biomolecule" in claims 1, 53, 55, 57, 58, 63, 109-111, and 116 "from a mixed population of cells" in claim 1, and 63 render the claim indefinite and confusing for the reasons set forth in the prior Office action, paper number 9.

In response to the above rejection Applicant argues the phrases "bioactivity or biomolecule" and "mixed population of organisms" are defined in the specification. Indeed, the phrases are defined in the specification. The definition of the phrase "bioactivity or biomolecule" include the phrase "and the like" which by itself indefinite phrase. The rejection is not directed to the phrase "mixed population of organisms", but it is directed to the phrase "from a mixed population of cells". If the phrase "from a mixed population of cells" is substituted by the phrase "from mixed population of organisms", the rejection would be obviated.

- (b) Claims 1, 53, 55, 57, 58, 63, 109, 110, and 116 are to incomplete methods for omitting essential steps, such omission amounting to a gap between the steps for the reasons set forth in the prior Office action, paper number 9.
- (c) Step (c) in claim 1 render the claims indefinite and confusing because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired for the reasons set forth in the prior Office action, paper number 9.

In response, Applicant argues that the method is described in the specification and the claims should be understood in the light of the specification. Applicant attention is directed to the fact that the claim is rejected under 35 U.S.C. § 112, second paragraph. Thus, the claim should be clear and concise to one of ordinary skill in the art. The claims are directed to a method having three steps: (1) screening a library for desired activity, (2) mutating the nucleic acid in the clone comprising the desired activity, (3) comparing the mutated desired activity to the wild-type activity. The three step method is inoperable because it lack essential step(s). If one of skilled in the art would not isolate the clone

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expressing the wild-type activity prior to mutation, he/she would not be able to carry the comparison step (3). The product of random mutagenesis of step 2 is a library of mutants which requires a screening step to identify the desired activity. Thus, without the additional steps, the method as claimed is inoperable and indefinite.

- (d) The phrases "oligonucleotide comprising a detectable molecule" in claim 4, "labeled with fluorescent molecule" in claim 9, "oligonucleotide substantially and having a detectable molecule" in claims 11 and 77, "oligonucleotide probe comprising detectable molecule" in claims 58 and 66, and "labeled with fluorescent molecule" in claim 71 render the claims indefinite and confusing for the reasons set forth in the prior Office action, paper number 9.

In response to the above rejection, Applicant argues that the word "comprising" would make it clear to one of ordinary skill in the art that the oligonucleotide would be fluorescent. As indicated in the previous Office action, in the science of Chemistry, a molecule is defined as a single molecular entity.

- (e) The clause "wherein modulation of the interaction of the first test protein linked to the DNA binding moiety with the second test protein linked to the transcription activation moiety results in a change" in claim 25 renders the claim indefinite and confusing because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired for the reasons set forth in the prior Office action, paper number 9.

Applicant argues that the claim has been amended to obviate the objectionable language. The claim has not been amended.

- (f) Claim 27 as amended recites the limitation "The method of claim 1, further comprising, prior to step (a)" because prior to (a) there is no library. Thus, there is insufficient antecedent basis for this limitation in the claim. For examination purposes only, it assumed that the additional step is between steps (a) and (b).
- (g) Claim 41 as amended recites the limitation "The method of claim 1, comprising screening the clone of (b) for", but step (b) of claim 1 is a mutagenesis. Thus, there is insufficient antecedent basis for this limitation in the claim.
- (h) The phrase "chromogenic or fluorescent substrate" in the context of claim 67 render the claim indefinite and confusing because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. The examiner thanks the applicant representative for identifying the typographical error in the prior Office action, but the claim is confusing for the reasons set forth in the prior Office action, paper number 9.

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- (i) the word "fosmids" in claim 138 renders the claim indefinite and confusing because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired for the reasons set forth in the prior Office action, paper number 9.

The examiner thanks the applicant for pointing to the typographical error in the prior Office action. Applicant argues that the word "fosmid" is well known in the prior art and filed a prior art reference to show that the word is known in the art, but here is no reference accompanied Applicant's response. The rejection will be vacated when the reference is filed.

- (j) the phrase "improved activity" in claims 144, 148 and 166 renders the claim indefinite and confusing because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

In response, Applicant argues that the phrase is understood in light of the specification and refers to the specification, page 8, lines 24-26. The word improved is a relative term and must be understood relative to a standard. The phrase is indefinite because one of ordinary skill in the art would not know what is being improved and relative to what. Inserting the phrase, "relative to the wild-type" and "identifying what is to be improved" would obviate this rejection.

- (k) All other claims are included in this rejection because they are dependent on rejected claims and do not correct the deficiencies of the claim from which they depend.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the

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invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1-6, 8-24, 27, 28, 30, 41-48, 50, 51, 53, 55, 57, 58, 63-68, 70-87, 98-105, 107-111, 116, 117, 119-143 and 157-169 are rejected under 35 U.S.C. § 102(e) as being anticipated by Thompson *et al.* (U. S. P. 5,824,485).

Claims 5-7, 9, 13, 24, 26, 29, 32, 48, 49, 58, 66-71, 85, 86, 89, 106, and 144-156 are rejected under 35 U.S.C. § 103 as being unpatentable over Thompson *et al.* in view of the state of the art as exemplified by the cited art, Stemmer *et al.* (Stemmer *et al.* U. S. P. 5,811,238) and Arnold *et al.* (U. S. Patent 5,316,935) as well as all possible material available to one of ordinary skill in the art.

In response to the above rejections, Applicant argues that Thompson *et al.* discuss only three types of libraries: (a) combinatorial natural pathway, (combinatorial chimeric pathway expression libraries, and (3) biased combinatorial gene expression libraries. Thompson *et al.*'s libraries are prepared from genetic material that has been pre-selected for a specific properties or from a derivation of what exists in a donor organism. In addition with regard to the rejection made under 35 U.S.C. § 103, Applicant argues that none of the cited references alone or in combinations teach or render the claims obvious.

Applicant's arguments filed 9/9/02 have been fully considered but they are not deemed to be persuasive. Applicant appear to read the prior art and his own claims in a selective manner to suit his purposes. Claim 1 is directed to a method of obtaining a "bioactivity or biomolecule" from a mixed population of cell environmental sample by screening for "bioactivity or biomolecule", [presumably] mutate the entire library or isolate a clone from the library and subject the DNA insert of the clone to mutageneses, and compare the wild-type activity to the mutant activity. The other independent claims 53, 55, 57, 58, 63, 109-11, 116, and 157 are either identical or slight variant of claim 1. As indicated above in rejecting the claims under 35 U.S.C. § 112, second paragraph, the examiner has made certain assumptions in order to examine the claims, and inserted step to fill in the gaps in the claimed method. Applicant attention is directed to the main teaching Thompson *et al.* which is to generate a diversified enzymatic activity from environmental samples. The teachings are clear and not confusing, and enabled in the priority documents of U. S. patent

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5,824,485 ('485), and thus, the '485 patent is a qualified prior art under 35 U.S.C. § 102(e). It is said that the 485 patent does not teach mutation of a desired gene. This is not true. The 485 patent clearly teach a chimeric genes and proteins. Chimeric genes and proteins are made the by mutation of natural genes and proteins and that by definition is a mutation. Since the pending claims do not teach a specific kind of mutation that is different from those taught in the 485 patent, the claims read on the teaching of the patent. Since Thompson *et al.* teach the claimed method of claim 1 and all other independent claims, one of ordinary skill in the art would have had the motivation, the teaching of the prior art and the skills to carry out the claimed method. New claims 167-169 are included in this rejection because they are claiming the same subject matter as that rejected under 35 U.S.C. § 102(e). Thus, the claims remain rejected.

No claim is allowed.


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashaat T. Nashed, Ph. D. whose telephone number is (703) 305-6586. The examiner can normally be reached Monday, Tuesday, Thursday, and Friday from 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached on (703) 308-3804. The fax phone numbers for this Group are (703) 305-3014 and (703)308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.


Nashaat T. Nashed, Ph. D.
Primary Examiner